

Abstracts

A181

old. After adjusting for confounders, patients with COPD and asthma were twice as likely to use FSC than those with Asthma alone (OR 1.99, 95% CI 1.73–2.29); patients with COPD alone were 66% less likely to receive FSC than those with Asthma alone (OR 0.34, 95% CI 0.28–0.41). African-Americans were a third less likely to be prescribed FSC than Caucasians (OR 0.69; 95% CI 0.61–0.78), and females about a third more likely than males to use FSC (OR 1.35; 95% CI 1.16–1.57). Age was not a significant predictor at the 0.05 level. **CONCLUSION:** The propensity to be prescribed FSC is significantly higher in patients with COPD/asthma than those with either disease alone. Race and gender significantly affect access to FSC in MMMCO, even after adjusting for comorbidities. Cost to the patient was not a factor, as the copayment was \$1 for any prescription.

STROKE—Clinical Outcomes Studies

EPIDEMIOLOGY AND ECONOMIC BURDEN OF STROKE-RELATED RISK FACTORS: A SYSTEMATIC LITERATURE REVIEW

Balu S¹, Dutcher S², Lee WC², Joshi AV³, Pashos CL¹

¹Abt Associates Inc, Lexington, MA, USA, ²Abt Associates Inc, Bethesda, MD, USA, ³Novo Nordisk Inc, Princeton, NJ, USA

OBJECTIVES: To determine the epidemiological risk factors associated with stroke, examine their influence on stroke-related costs, and identify areas that need further research. **METHODS:** A systematic literature search was performed (1996–2006) using an exhaustive list of relevant search terms to identify articles published on epidemiology of stroke and associated risk factors, costs of stroke and economic impact of risk factors on stroke. Studies were identified through electronic Medline® and PubMed® searches. Manual review of bibliographies allowed determination of additional articles. **RESULTS:** Out of a total of 41 included studies, 26 studies focused on stroke-associated risk factors, while 15 studies examined the economic burden of stroke. Apart from age and race [African-Americans have the highest per-capita stroke costs (\$25,782), followed by Hispanics (\$17,201)], hypertension was the most prevalent clinical risk factor (58.1% to 75%), followed by diabetes. Relative risk for stroke was higher in women (increase of 2–6.5 fold) as compared to men (1.5–2 fold) with diabetes. Renal dysfunction, pregnancy, inflammation and infection, depression, chronic headache and migraine, metabolic syndrome, cancer, and AIDS were other risk factors identified. Total cost of stroke in United States was found to be approximately \$58 billion [2006 American Heart Association]. Mean total cost per individual approximated \$125,000. Subarachnoid hemorrhage was reported to be the costliest stroke sub-type. Hospitalizations and medications were the major cost components in stroke treatment. Studies have linked few risk factors, such as smoking and higher age, to increased stroke treatment costs, but the impact of the majority of risk factors on stroke costs has not been examined. **CONCLUSION:** Stroke has a significant economic impact on society, due to its morbidity and mortality burden. However, few studies have examined the impact of individual stroke-associated risk factors on stroke costs. Further research demonstrating economic link of common risk factors with stroke is warranted.

PST I

HOSPITAL-BASED OUTCOMES ASSOCIATED WITH NON-TRAUMATIC SUBARACHNOID HEMORRHAGE

Van Den Bos J¹, Dreyer NA², Bly AK¹, Mahmoud SM¹

¹Milliman, Denver, CO, USA, ²Outcome, Cambridge, MA, USA

OBJECTIVES: Subarachnoid hemorrhage (SAH) is a rare but catastrophic event, occurring in ~10/100,000 people, which may result in permanent brain damage or death. Although treatment protocols for surgical or endovascular management of SAH have been published, widespread differences exist in patient management. **METHODS:** The MedStat Marketscan databases were used for 2000–2004 to study medical utilization for non-traumatic SAH. Data included commercially insured and Medicare-eligible claimants. Hospitalization records were examined for patients ages 18 and older who had a primary diagnosis of SAH (ICD-9 430) without any indication of trauma (n = 3241). If a hospital stay was followed by another hospitalization which started on the date of discharge, the two were treated as a single episode of care. Rates of surgical clipping and/or endovascular coiling (“treatment” to secure the aneurysm), inpatient death rates, day of any surgical treatment, length of stay, and hospital readmissions were examined. **RESULTS:** Seventy percent of admissions for SAH were ages <65, and 35% were treated. Among those over age 65, only 13% were treated. 14% of SAH patients died during the initial hospitalization. Mortality rates were lower for those treated at all ages. Among survivors treated, 45% were treated on the day of admission, and about one-third were treated the day after admission. Among survivors, the median length of stay was 6 days for those without treatment, and nearly twice as long for patients who were clipped, coiled or both. 5% of patients were readmitted to hospital, with a median of 17 days between first and second admissions. **CONCLUSION:** Most patients presenting at the hospital with non-traumatic SAH received no surgical or endovascular treatment. The 35% treatment rate for SAH is considerably lower than in other countries, raising the possibility that patient treatment may not be optimal in the U.S.

STROKE—Cost Studies

PST3

THE IMPACT OF WIDESPREAD ACCESS TO ORGANIZED STROKE CARE IN CANADA

Caro JJ¹, Huybrechts KF¹, Kongnakorn T¹, Ozer Stillman I¹, Sharma M²

¹Caro Research Institute, Concord, MA, USA, ²The Ottawa Hospital, Ottawa, ON, Canada

OBJECTIVES: Despite solid evidence, measures for prevention, treatment and other health practices that could reduce mortality, disability and costs are not being used routinely in Canada. An economic model was developed to formally assess the potential clinical and economic impact of implementing a comprehensive stroke program. **METHODS:** A discrete event simulation was designed to assess the implications of various stroke strategies defined in terms of the usage of organized stroke units and clot-busting therapies, access to rehabilitation, stroke awareness and prevention campaigns. Stroke incidence, modified by whatever prevention practices are analyzed, is applied to the Canadian population to create the simulated patients with stroke. Each patient’s management is simulated according to his characteristics and the interventions available given the strategy under consideration. Over time, patients are exposed to risks of: death, new stroke, change in functional level, and transfer to another location of care. Each event is processed in terms of its clinical consequences, resource use and cost. Data were obtained from the Registry of the Canadian Stroke Network, the Canadian Heart Health Survey, Statistics Canada and the Institute for Clinical and Evaluative Sciences. **RESULTS:** Implementation of widespread prevention and awareness campaigns would result in ~127,000 fewer initial strokes over 20 years. Access to organized

PST2